

ABSTRACT OF THE DISCLOSURE

LUBRICANT RETENTION DESIGN FOR DISK DRIVE FLUID

DYNAMIC BEARING SPINDLE MOTOR

[0029] A lubricant retention design for a fluid dynamic bearing design in a spindle motor utilizes a labyrinth gap that is formed between the sleeve and the shaft of the bearing. The gap is used in conjunction with a barrier film to impede the flow of lubricant into the lateral and axial vent holes during non-operational vibration, such as shipping and handling of the end product. In another version, a plug is located in the lateral vent hole. The plug has a very small passage that permits air to pass therethrough for atmospheric pressure equalization, but prevents the escape of lubricant into the vent holes. Alternatively, the plug may be formed from a non-wettable material such as porous foam or sintered material and provided with a larger opening. Yet another solution utilizes a combination of both the labyrinth and plug designs.